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# CACTUS AND SUCCULENT JOURNAL

**Of the Cactus And Succulent Society Of America**

VOL. 1 FEBRUARY, 1930 No. 8

*In quest of the Gila Woodpecker*

See Page 153

# JOURNAL OF THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

*A monthly magazine devoted exclusively to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. "The Cactaceae," by N. L. Britton and J. N. Rose, has been adopted by this Journal for purposes of identification.*

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**Mrs. August F. Behrens of Brady, Texas, writes:**

I wish to unburden my mind a bit; don't know if other readers of the Journal who live hundreds or thousands of miles from California feel as sore and disappointed as I do when I receive your notices of the wonderful meetings and cannot be there to enjoy them.

I am a great lover of nature and how I wish I could feast my eyes on the wonderful and beautiful plants shown at the different places each month and the prize plants given to those attending—to say nothing of the advantages every visitor has to exchange or purchase some long wished for plant and to enjoy the lectures. The members outside of California miss all these fine meetings.

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**Thomas Meehan's Monthly (Philadelphia) October, 1881:**

"There are societies nowadays for all sorts of things, but the last thing to be thought of, would be a society to encourage the cultivation of cactuses; yet this is the title of an organization that has been formed in Baltimore.

"After all it is a very meritorious society. There are few things more interesting than cactuses. As a general thing nearly all of them have gay flowers; although blooming but a few days or weeks in the year; and when we come to their cultivation, although many persons think it must be very easy, there are few things which are more thankful for good culture than plants of this family."

In re Mr. Braunton's article appearing in Vol. I, No. 6 of the Journal, I found the above the other day in this old but very delightful magazine.

—ETHE B. HIGGINS.

**Mr. C. W. Armstrong of Vancouver, B. C., writes:**

"I envy you your company of kindred spirits in the study of cactus and succulents. I am alone here with no one to argue the fine points of cacti (not spines) with. I spend hours pouring over Britton & Rose but I don't seem to get very far. Next spring I am going to send to Europe for a real collection of Euphorbias."

Mr. Armstrong is to be envied his privilege of being able to send for a collection of Euphorbias without all the difficulties we in the United States are subject to in importing plants.

---

Mrs. Sophie B. Ryan of Audubon, N. J., adds to Col. Kewen's Novice Directory* (Vol 1, No. 4, Pg. 14) the following:

| | |
|---|---|
| Lawyer's tongue | Gasteria verrucosa |
| Necktie plant | Crassula cordata |
| Alligator Cactus | Aloe arborescens |
| Toad Cactus | Stapelias |
| Lemon Cactus | Pereskia |

She says that the old German florist from whom she originally purchased her 35-year-old stock plant of *Aloe arborescens* makes a tea of the leaves cut up in small pieces and used for colds, etc. She says it is the best thing as a cure but she doesn't like it as it is too bitter. Mrs. Ryan wishes to extend the season's greetings to all the members of the Society.

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*Ed. Note: Send in additions to this list of common names so that we can reprint it complete at some future date.

(Xo.1) Photo by West

*Aeonium hybrid, Garden of Mrs. Horace Jenkins, San Francisco*

In foreground: *Mesembrianthemum verruculatum* and *Dudleya sp.*

# THE CANARIAN SEMPERVIVA

By JAMES WEST, San Rafael, California

From the esthetic point of view not many of the succulents are more satisfying for garden purposes than the group of large Semperviva, chiefly from the Canaries, belonging mainly to the genus (or section, if you prefer) *Aeonium.* In the genial insular climate and rich volcanic soil of these Atlantic outliers of the African continent the humble houseleek has apparently shed all its inhibitions and run riot trying to show what it could do, with the happiest results for the gardener in quest of unusual material.

Splendid and stately are the Agaves, rich and colorful the Aloes, but in time they convey rather more than a hint of the elephantine in the 50-food garden; indeed, to carry on the metaphor, in a city lot an *Agave salmiana* will most certainly play the role of white elephant in a few years; nor will the larger Aloes fail to make you feel crowded right soon.

Again, the lowlier tribes of *Mesembrianthemum, Stapelia, Crassula* et hoc genus omne, can hardly aspire to a position as accent or piece de resistance in anything but a table garden.

*Aeonium* provides us with the happy medium, plants sufficiently tall in size and tree-like in shape to lend scale and dignity to the small

planting, yet never getting out of hand and dwarfing everything roundabout.

They are perhaps somewhat limited in color-range, both of leaf and flower, glaucous through green to bronze in the former, white through cream to yellow in the latter, but within that range there are many delicate and subtle variations: *A. arboreum,* golden green to blackish maroon, thrusting up stout scepters of gold in season; *A. decorum,* a fusion of emerald with a compound of terracotta and rusty scarlet, the flowers blending in with ivory of a faint ruddy tinge; stemless but magnificent, *A. canariense,* warming from green to russet in the sun, with flowers, be it confessed, of a depressing greeny-white, but statuesque in bud; *A. haworthi,* a rigid mound of cool grey, edged with red, flowering into a somewhat nondescript strawy white. The shades of pure green are many, especially bright and glossy in the tall-stemmed *tabulaeforme-hybrids.*

Much longer is the tale of species, amounting to 60 or more, not counting hybrids, in the Canaries alone, where every island, and in each island every type of habitat, varying with elevation, exposure, humidity, soil and local climate, seems to have bred its own peculiar species.

*Sempervivum* has surely added many an inch to its stature in the Islands; perhaps the most impressive species are those of the type having a single stem crowned by a large rosette. The best example of this in cultivation with us is a hybrid, presumably with *tabulaeforme* as one ancestor; indeed it was for long known as *S. tabulaeforme* in California gardens*; but without warrant, as the true species is of quite different habit, being almost stemless and as flat as a—well, the obvious comparison is the most descriptive, for it looks exactly like a big, beautiful green pancake plastered against the rocks. In no other plant do leaves overlap so closely into an unbroken surface.

But to come back to our *Pseudo-tabulaeforme*: here we have (in a full-grown specimen) a stem almost as stout as that of a young palm, divided by the boundaries of the old leaf-scars into rhomboidal fields so regular as to look almost artificial, an impression heightened by the varnished-looking surface. The crown of the little tree is formed by the great rosette of leathery, shining green leaves, attaining in good specimens a spread of close to three feet. Its appearance varies a good deal with conditions. In summer, and if kept fairly dry, it will shrink into something resembling the "table" of *tabulaeforme* and look like a pretty small capping for so stout an underpinning, and quite a stiff and solid affair. But during active growth, and in sheltered positions at any time, the leaves attain a much greater length before being shed but without losing their appearance of sturdiness. They are flung about with abandon, catching the light on their gleaming surface at varying angles and showing beautifully the essential structure of the spiral whorl forming the plan of the rosette. I know of no other plant which gives one such a sense of irrepressible vigor and vitality. This vital force, making itself felt as if endeavoring to struggle through the bonds of a certain formality of underlying structure, is perhaps the secret of their strange charm to those blssed with sensitive eyes, as are nearly all lovers of plants. I think this peculiar character is the reason why they seem so well adapted to a formal or semi-formal scheme of planting; they can decorate and vivify its rigidities without destroying an organized design. In any sort of planting, including the thoroughly naturalistic, their palm-tree shape is of great value, especially in a restricted space, because it is eminently fitted to give that greatly-to-be-desired element of scale. It leads the observer unconsciously to imagine a much larger plant, reduced by perspective, and that fact, immediately changes the boulder to a mountain, the goldfish pool to a lake, the length of the garden path to a vista. An illusion, but like so many illusions, very pleasant.

A row of these big *Sempervivums* along the top of a stone wall, thrusting their crowns out to the sun, great leaves reflecting the sky, in summer proudly raising aloft their immense broad-based spires of innumerable golden stars, as they may be seen in that justly celebrated garden of Mrs. Jenkins, where the dunes of San Francisco halt at the Pacific, is a sight not soon forgotten.

But perhaps we have been getting somewhat dithyrambic, and it may seem as if there were only one *Aeonium* worth looking at. There are many. There is, for instance, *A. canariense.* Out of the solid rock, apparently, hugging it closely, grows a perfectly enromous, but beautifully shaped shallow bowl of a rosette of rather few but large spoons, we may be getting too culinary but that is just the shape of the leaves—those round ones that come with the soup at good hotels—, leaves of closely shaven velvet, with a suspicion of stickiness (if we were not taking a vacation from botany this month, we would say viscidity); this velvet is lovely to behold, when

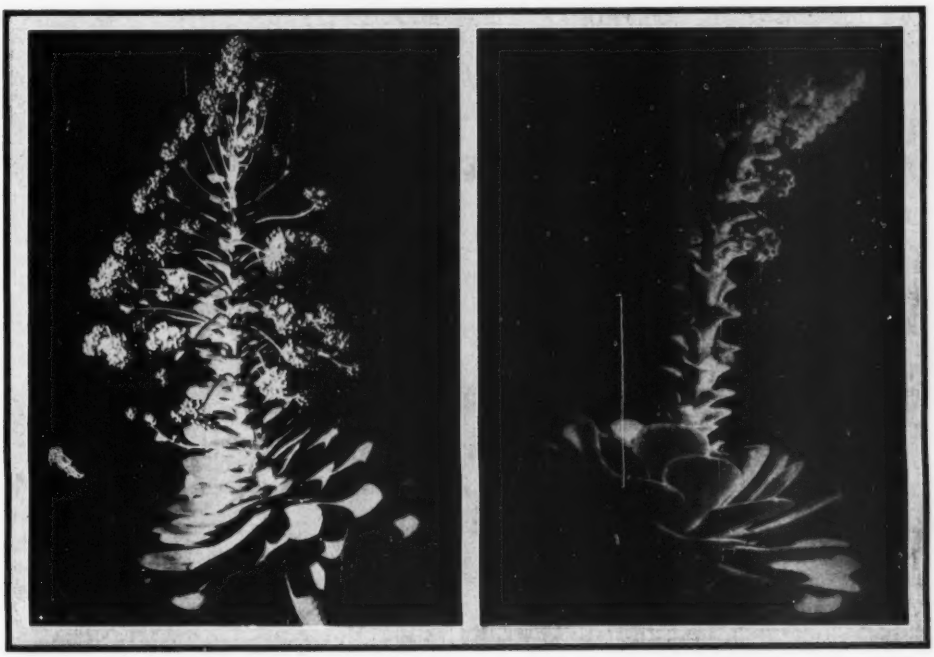
*Its provenience is not certainly known, but it was first distributed by the late Charles Abraham of San Francisco, where it is yet much grown; he probably raised it from imported seed. We have it on the authority of R. L. Praeger, than whom there is no better, that it is not a species. Mr. Praeger has visited the Canaries twice in the course of his study of the Semperviva.

the light is just right, making a narrow halo all around the edges of every giant leaf. The bronzy tones taken on by the leaves in exposure to sun and wind are quite remarkably beautiful.

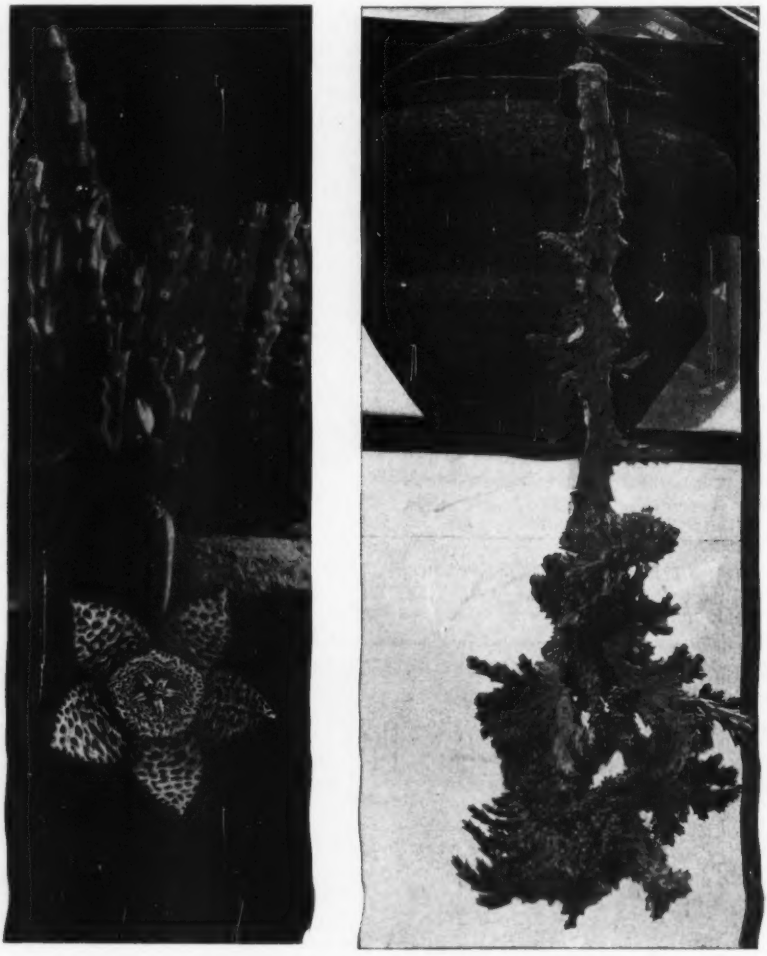
The slow birth of the flowering stem, taking many weeks to develop, is well worth watching from day to day, as it first lifts up the heart of the rosette, then gradually begins to show the whole structure in embryo, a thick main stem and many branches, each growing from a beautifully convoluted clasping bract. As the stem grows, it gradually consumes the nourishment stored up in the leaves, until finally that perfect rosette has shrunken to nothing, which always seems like a tragedy, lightened only by the thought of the tens of thousands of seeds the substance of the leaves has gone to make, capable in their turn of bringing forth generations of rosettes as good as those dead and gone. With this species our hopes do indeed have to rest mainly on seed, for the plant is inconveniently disinclined to asexual propagation, offsets being few and far between. When a friend presents you with a plant of *Aeonium canariense,* you may take it for granted that you are *persona grata.*

It would be easy to fill several pages more with enumerations and description of many more kinds of *Aeonium* and their various excellencies, but we fear exhaustion on the part of the reader. *A. tabuliforme* alone, already mentioned, would deserve an article to itself. Most of the species are of easiest cultivation, wherever they are climatically suited, namely where there are no extremes either of heat or cold; some are very hardy, and can be grown wherever the majority of succulents will thrive, notably *A. haworthi.* But the majority do best in a climate with comparatively cool summers and nearly frost-free in winter. *A. tabulaeforme, decorum* and *canariense* are distinctly tender, especially the first. This is written with feeling, while the thermometer is down to 29 and still falling, with the prospect that anything in the way of *Aeonium* is likely to be among the missing in the morning.

They seem to be at their best in those parts of the San Francisco Bay region where there is no heavy frost, especially near the beach, where it seems natural for such islands to be happy.



*Aeonium hybridum* *Aeonium canariense*



*Stapelia variegata (Half Size) on the left. Crested plant on the right.*

## STAPELIAS

*By* Dr. Arthur D. Houghton

Among the most interesting of the succulent plants are the *Stapelias*. The genus *Stapelia* belongs to the family called the *Asclepiadaceae*. This family is named after Asclepias, the Greek God of Medicine, better known to us by his Latin name Aesculapius.

The plants of this family can be told from all others by their pollen being formed in sticky masses, somewhat similar to those of the Orchids and by their flowers being interpetiolary (borne between the petioles). This family in addition to *Stapelia* contains many other interesting succulents. *Ceropegia stapeliiformis* for instance, which, when not in flower looks like a *Stapelia*. The genera *Frerea, Hoodia, Trichocaulon, Decabelone, Piaranthus, Heurniopsis, Duvalia, Caralluma, Huernia, Diplocyathus,* and *Pectinaria,* are all members of the *Asclepiad* family and sisters to the *Stapelias*. The *Stapelias* were named by Linnaeus to commemorate Bod-

erus á Stapel, a Dutch physician to whom we owe much of the botanical lore of the old Greek Theophrastus.

The *Stapelias* are practically all of South African origin. The one pictured in our cut being the one most common in our gardens. Nearly one hundred *Stapelias* are known; but as yet, the possession of a dozen true *Stapelias* in a collection in this section of the country, is a mark of distinction.

A few million years ago the *Stapelias* gave up the idea of competing in color and perfume with their neighboring plants, and started catering to the carrion insects, such as bluebottle flies. Their colorings and marking are adapted to attract that class of insects to do their pollenizing for them. Their odor is that of decaying meat. Some of them have hairy flowers which give them the appearance of a hairy portion of dead flesh, and the colors range from pus-yellow to ageing liver. The carrion flies attracted by this combination of odor and color, bring about the fertilization of the flower and deposit their eggs in the calyx of the flower.

Some of the best garden forms are *S. gigantea,* whose flower is fourteen inches in diameter, and of which I am the proud possessor of a very large specimen. *S. barbata* with its bearded flower; *S. bayfieldii* with its dark green tinged with purple flower; *S. asterias* with its violet-purple flower marked with transverse yellow stripes; *S. anguinea* whose flower is spotted like a snake; *S. grandiflora* with its purple flowers edged with white hairs; *S. hamata* with its blood-colored flowers with a white hairy center; and *S. unguipetala* with its rich purple-brown corolla, the lobes of which are marked two-thirds of the way up with transverse yellow lines.

The *Stapelias* will stand a small degree of frost, but must have good drainage. When planted in brick rubbish and good sandy loam and fed a little weak manure water in springtime when growth begins, magnificent specimens may be made.

If grown in shade, the branches elongate in a remarkable manner. A plant normally six inches high will throw trailing stems over a yard long. When grown in a glasshouse for flowering, they should be placed high—close to the glass.

*Stapelias* are easily propagated by cuttings, but of course, seed raising gives the greatest thrill. They are easy subjects to hybridize and some crosses with *S. gigantea* with its fourteen-inch flower should give some great novelties. The tendency to make crested forms is strong in this genus. Seldom a season goes by without a crest appearing in any good sized clump.

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## EUPHORBIA MELOFORMIS

*By* G. A. FRICK

Cut A: Somerset East Plant
*Euphorbia meloformis*
Male plant, ⅓ size

A curious and rare *Euphorbia,* often mistaken for an *Echinocactus,* is *E. meloformis.* This species was quite plentiful a few years ago, but today is very scarce, and dealers possessing it ask a high price for small single plants. This scarcity no doubt is due to the ignorance of collectors in caring for them as *E. meloformis* is a very easily killed plant. It will not live if watered in the winter months in a location that does not dry out in a very few days; if in a hot house,

the moist heat seems to kill it. Dry heat, light watering and good drainage are what they need and a safeguard against loss at this time of the year.

Many plants are lost by the over ambitious beginner's desire to have many plants instead of one nice cluster, and he forthwith cuts off all the small branches for propagation; this invariably kills the mother plant, which could have been avoided if two or three small branches had been left on the main stem, thus continuing the pace of growth the plant was making.

Having seen illustrations which apparently represented some other form of *Euphorbia meloformis* than is common among our local collectors, and having been informed by Dr. A. D. Houghton that up to a few years ago there was an altogether different appearing *E. meloformis* to be found among the Southern California collections, I was always on the lookout for such plants, but now I am convinced there are none in this section of the country. From South Africa comes the news that clears up this mystery: R. Marloth, the eminent botanist of Cape Town, has made the discovery that there are only two species of melon shaped *Euphorbias,* namely *E. meloformis* and *E. obesa;* all other names given the *E. meloformis* group represent only different forms of this same plant, grown in different localities.

The true *E. meloformis* (see cut A) is the plant we are all familiar with and have in the collections of America. A different appearing *meloformis* species was named by N. E. Brown at first *E. infausta* and later *E. falsa.* Both are of common occurrence in their respective areas, the later in the Zwartkops and Uitenhage districts near Port Elizabeth, and the former further inland in the district of Somerset East.

There is no constant difference in the flower of the two kinds, while the plants themselves and especially their inflorescence strike one as being conspicuously different, and while they vary considerably in the same locality, we are now convinced that the two are merely local forms of one species. The Zwartkops plant grows under the influence of the coastal climate, while the Somerset East plant grows under more arid conditions.

The following description of both plants will help the owner of a specimen of *E. meloformis* to determine the identity of his plant:

Cut A (Somerset East Plant) Body usually slightly higher than thick, greyish-green with lighter transverse bands; peduncles of both sexes woody, at the flowering stage; and consequently persistent, generally branching from the base but occasionally unbranched on the same plant, for half to one inch and only bearing a few cymes; branches spreading laterally and thus forming a depressed entangled mass over the apex of the plant.

The body of full grown Zwartkops plant are smaller than Somerset East plant; usually depressed globose (shorter than thick), fresh green with less conspicuous bands. Peduncles on both sexes as a rule herbaceous and deciduous, simple or branching in the upper part only, usually erect, but often also deflexed, or both styles in the same specimen, plants with some woody remains of old peduncles on the rib occurs occasionally.

Another form described in Thunberg's "Flora Capensis," is *E. pomiformis.* This also fits the Zwartkops plant, while still another form described in this work is *E. valida* which has a stem 10 inches high and four inches in diameter at the thickest part; this is just another of the several intermediate varieties. I am experimenting at the present time with the stretching of *E. meloformis* and the results are true to the description of *E. valida* so far, but I have not yet had the peduncles to deal with.

In the library of the Cactus and Succulent Society, we have a catalogue from a dealer in Dresden, Germany, that lists an *E. meloformis* var. *corderey;* I have never heard of this variety before, but am inclined to believe this is just another form of the Zwartkops plant.

*E. pseudoglobosa,* a recent discovery in South Africa, was at first thought to be a member of the *Meleuphorbia* group, but developments proved it does not properly fit there, and was later found to be of the *Dactylanthes* family, which group I will take up in my next article.

Consequently the opinion that there are only two species of melon-shaped Euphorbias, viz., *E. obesa* and *E. meloformis,* is right, and all other names mentioned represent only forms of monstrosities of the latter species.

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### Encinitas Flower Show

Thomas F. McLoughlin, manager of the National Mid-Winter Flower Show to be held at Encinitas on February 19, 20, 21 and 22, reports that Class 25 should interest the Society. Class 25 reads as follows: "Best exhibition of rare cactus and succulents. 1st Prize—Silver trophy, blue ribbon, and $25 cash. 2nd Prize—Red ribbon and $10 cash. 3rd Prize—Award of merit.

# BOTANICAL KEYS

## What they are and how to use them

*By* ERIC WALTHER

Anyone pursuing the study of plants seriously will sooner or later make the acquaintance of botanical keys. To many beginners these appear as more or less of an esoteric mystery, to be comprehended only by the initiate; and certainly this attitude is understandable when we contemplate some keys, apparently furnishing their creators with an excellent opportunity of displaying their choicest technicalities. Of course the use of a certain number of technical terms is unavoidable if we are to be concise; and all here used are explained in the glossary at the end. In reality, though, a key should be just what its name implies, a shortcut to knowledge; in this case of the name of a plant being studied. In other words, it really is a condensed expression of the characters essential for differentiating one plant from others, the arrangement usually taking the form of a number of systematically arranged questions or statements, by following which we arrive at the name of the particular item under consideration.

To give a simple illustration of the working of a key, we may take as an example a commonly grown succulent, present in nearly every garden. We shall assume that we know nothing at all about this, and shall try to determine its genus by means of key No. 1 as shown below. Note that the various statements are each preceded by an initial letter or letters, the double letters representing the other alternative of each qustion. Beginning with the first line, after the

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KEY NO. 1*

**Example of the INDENTED SYSTEM.**

A.Plants bearing flowers and seeds.
B.Ovules enclosed in an ovary, the latter with one or more stigmas.
C.Plants with two cotyledons; leaves mostly feather-veined; flowers mostly five-parted....*DICOTYLEDONS.*
D.Ovary of several free, distinct carpels.
E.Plants succulent..... *CRASSULACEAE*
F.Stamens twice as many as the petals.
G.Petals united below into a more or less evident tube.
H.Parts of the flower in fives.
I.Calyx-lobes as long as or longer than the corolla-tube.
J.Stamens free from each other.
K.Petals without scale-like appendages within.
L.Corolla urnshaped, more or less sharply angled; petals erect.
M.Corolla conspicuously angled, mostly bright-colored; mostly Mexican. *ECHEVERIA*
MM.Corolla scarcely or not angled, usually paler; mostly Californian.....(14)
LL.Corolla bellshaped, scarcely angled; petals spreading.....(15)
KK.Petals with scale-like appendages within near base.....(16)
JJ.Stamens united with each other .....(17)
II.Calyx-lobes shorter than the united part of the corolla.....(18)
HH.Parts of the flowers in fours.....(19)
GG.Petals free to the base, mostly spreading .....(20)
FF.Stamens as many as the petals.....(21)
EE.Plants not succulent.....(22)
DD.Ovary of a single or of several united carpels.....(23)
CC.Plants with one cotyledon; leaves mostly parallel-veined; flowers with parts mostly in threes or sixes .....(24)
BB.Ovules borne naked on a scale; stigmas none.....(25)
AA.Plants without flowers or seeds, bearing spores instead .....(26)

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*FOOTNOTE: The numbers in parentheses in the right-hand margin of both keys refer to the following items:

14. *Dudleya,* etc.
15. *Gormania, Altamiranoa, Stylophyllum,* etc.
16. *Pachyphytum.*
17. *Courantia.*
18. *Cotyledon* proper, *Urbinia,* etc.
19. *Kalanchoe, Bryophyllum.*
20. *Sedum,* etc.
21. *Crassula, Rochea.*
22. *Saxifragaceae,* in part, etc.
23. Most other *Dicotyledons.*
24. *Monocotyledons.*
25. *Gymnospermae,* or Conifers.
26. *Pteridophytes* or Fern-plants.

letter *A.*, we read this carefully to the end and find that it does not agree with our plant; this causes us to turn to question *AA*, which should always be gone over in any case as a matter of caution. Now, since manifestly our plant has flowers, we continue under *AA*, there reading alternatives *B.* and *BB*. As our plant has none of the characters given under *B*, being not at all like a conifer, but agrees perfectly with *BB.*, we continue under that heading. A moment's examination will suffice to show us that the flowers of our plant have 5 petals or corolla-segments, which places it under *CC.*, the *Dicotyledons*. Step by step we discover that we are dealing with a plant having both petals and sepals, several free carpels and which furthermore is succulent, thus clearly placing it into the *Crassulaceae*, the family containing such familiar plants as *Sedum, Cotyledon* and *Dudleya*. Continuing with the further division of this family under alternative *G.*, we successively determine that the flowers of our plant have twice as many stamens as petals, that the latter are erect and united below into a more or less evident tube, that the parts of the flowers are in fives, that the calyx-lobes or sepals are rather large, being as long as or longer than the corolla-tube, that the corolla-segments have no scale-like appendages within, that the stamens are free from each other, that the corolla is more or less urn-shaped, strongly five-angled and usually brightly colored. This procedure has brought us to *Echeveria*, the generic name of our plant, and we shall leave determination of the species to another occasion.

To repeat, it is the systematic arrangement of the points just enumerated that constitutes the key. This particular system is known as a dichotomous key from the fact that it is two-branched, there being always two alternatives under each heading; and the indentations on the left cause it to be designated an indented key. There are several other systems of keys as well, about one of which we shall have more to say further on, but all keys are essentially alike in that they present the essential characters distinguishing one plant from another in the form of a linear table.

A few words may here be said about the various troubles liable to beset beginners. Some keys are not strictly dichotomous or two-branched, but have three or more alternatives to each question; and nothing is easier than to overlook one of these, especially when located on another page. Many keys require complete material, asking about flowers, fruit and foliage, which are often difficult to obtain in the field, many of our ornamentals fruiting only very rarely. Sometimes even then a sound conclusion may still be arrived at by proceeding under both headings and eliminating all impossible items, when the matter often becomes quite clear. Some keys fail of their purpose because they do not make due allowance for a beginner's tendency to err, both in the proper interpretation of the characters mentioned, and in the use of the key itself. The important thing to remember is that the beginning is always the hardest, and that the matter will become increasingly easy as we increase our knowledge of the particular subject, and of keys in general. Of course it will always be difficult to put into simple language points of difference so plain to the specialist, but in reality nothing serves better to make plain specific and other distinctions than the preparation of a workable key.

Many of the characters used in keys are relative, not expressible in absolute terms, and leave room for doubt as to where the dividing line should be drawn. This need surprise no one at all familiar with the facts of evolution, as the very concept of species, in the Linnean sense at least, is wholly artificial and man-made, and often almost impossible to maintain in the face of the many intermediate links connecting the various extremes. This difficulty is particularly apparent when dealing with horticultural forms, varieties and hybrids, which often are the despair of the systematic botanist.

A good key will make allowance for variations by placing polymorphic forms under both headings, a practice seemingly abhorrent to some authors without any good reason. It has been the writer's experience that few lengthy keys can be really workable without numerous repetitions, and the merits of a key can often be judged by the number of the former, in other words, the more duplicated items, the better the key.

It is not at all necessary that differentiating characters used in a key should have to be expressive as well of the relationship or evolution of the particular plant or group. In fact, it is the attempt to express this information in keys intended primarily for determinations which accounts for the failure of some of them to achieve their real purpose. Superficial, vegetative and obvious characters are often more useful for simply identifying a plant than technical points of floral or fruit-structure. As an illustration we may cite the recent attempt to split up the old genus *Mesembrianthemum*, a division based in many instances on fine differences in the seed-capsules. Whatever may be the ultimate fate of this attempt, Berger's key to the species will long remain useful for practical purposes,

being based largely on obvious, vegetative characters.

Of the various other systems of keys the writer here wishes to single out for mention only the so-called "bracketed" key, as being possessed of several points of superiority over the indented discussed above. A sample of the former is given below under No. 2. There the first question this time bears the number *1*, with the two alternatives brought together and labelled respectively *a* and *b*. Carefully perusing both of these to the end, we decide which one best fits the plant in question, and only then note the number to the right of that particular alternative. Looking for this new number in the left-hand margin, we there repeat the process, and again as often as may be necessary to arrive at the name sought. Care should be taken to always read both alternatives; as they are usually quite contrary to each other their meaning will become much clearer when they are contrasted.

The principle merits of the bracketed key may be summed up as follows:

1. Both alternatives are brought together where they may easily be compared; this also obviates the tendency, especially of beginners, to skip one of them where the first one read *seems* to fit.

2. No space is wasted by indentations, the last a feature of indented keys often carried to ridiculous extremes in the case of large groups, and a matter of importance in these days of high costs of paper and printing.

3. It is easier to have the key set up correctly by the printer, and proof-reading is simpler.

4. Lengthy keys may cover several pages without causing any difficulty, and may even be continued into another volume, or issue in the case of a periodical publication.

The bracketed key is commonly used in Entomological works, etc., and the failure of Botanists in general to appreciate its value is hard to understand, except on the ground that students of Botany require something simpler and plainer. These two implications we beg to question most seriously, for neither is the indented key truly simpler and easier to master, nor are botanical students below the level of intelligence of Entomologists, etc.

In conclusion attention is again called to the brief glossary of botanical terms used, which we hope to amplify some other time. The writer should be glad of any inquiries, on any of the aspects of keys here touched on, by anyone writing to him care of this Journal.

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**KEY NO. 2***

**Example of the BRACKETED SYSTEM.**

1a.Plants without flowers or seeds, but bearing spores.....(26)
—b.Plants bearing flowers and seeds..... 2
2a.Ovules enclosed in an ovary, the latter with one or more stigmas..... 3
—b.Ovules borne naked on a scale, stigmas none.....(25)
3a.Plants with one cotyledon; lvs. mostly parallel-veined; flowers with parts usually in threes or sixes..(24)
—b.Cotyledons two; leaves mostly featherveined; flowers with their parts mostly in fives..*DICOTYLEDONS* 4
4a.Ovary of several free, distinct carpels..... 5
—b.Ovary of a single or several united carpels.....(23)
5a.Plants succulent.....*CRASSULACEAE* 6
—b.Plants not succulent.....(22)
6a.Stamens twice as many as the petals..... 7
—b.Stamens as many as the petals.....(21)
7a.Petals united below into a more or less evident tube..... 8
—b.Petals free to the base, mostly spreading above.....(20)
8a.Parts of the flowers in fives..... 9
—b.Parts of the flowers in fours.....(19)
9a.Calyx-lobes as long or longer than the corolla-tube..... 10
—b.Calyx-lobes shorter than the united part of the corolla .....(18)
10a.Stamens free from each other..... 11
—b.Stamens united with each other.....(17)
11a.Petals with scale-like appendages within.....(16)
—b.Petals without any scale-like appendages within..... 12
12a.Corolla urnshaped, sharply angled, petals erect..... 13
—b.Corolla bellshaped, scarcely angled, petals spreading.....(15)
13a.Corolla conspicuously five-angled, mostly colored; mostly Mexican.....**ECHEVERIA**
—b.Corolla scarcely or not angled, usually paler; mostly Californian .....(14)

*See footnote page 149.

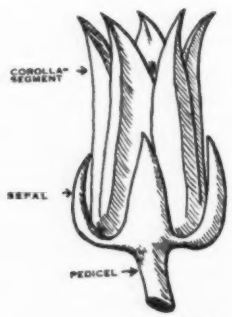


Fig 1. (x 2½)

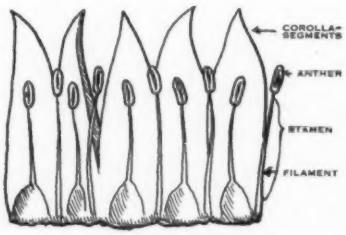


Fig. 3 (x 2½)

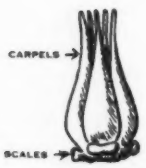


Fig. 2 (x 2½)

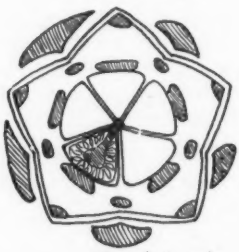

Fig 4 (x 5)

*Fig. 1.* Side-view of Echeveria flower. (x 2½)
*Fig. 2.* Side-view of carpels, with hypogymous scales at base. (x 2½)
*Fig. 3.* Corolla detached and unrolled, with attached stamens. (x 2½)
*Fig. 4.* Schematic cross-section of flower, showing the outermost ring of calyx-lobes, the angular corolla, the ten stamens, the five carpels with attached scales; and indicating the attachment of the ovules in a single carpel. (x 5)

## GLOSSARY OF TECHNICAL TERMS USED:

*anther:* that part of the stamen containing the pollen.

*calyx:* the outermost floral envelope.

*calyx-lobe:* equivalent to sepal, where the latter are united below.

*carpel:* one part of a compound pistil.

*corolla:* the inner of the two floral envelopes.

*corolla-lobe:* the equivalent of petal where they are united.

*corolla-segment:* see corolla-lobe.

*corolla-tube:* the united part of the petals where they are grown together.

*cotyledon:* seedleaf, the first leaf or leaves made by a germinating seedling.

*dichotomous:* two-branched or forked.

*family:* an association of related genera that have more in common with each other than with other genera.

*filament:* the stalk of the anther.

*genera:* plural of genus.

*genus:* a group of related species having more in common with each other than with other plants; the first part of a botanical name.

*key:* a table intended to facilitate determination of a plant's identity.

*ovary:* that part of the pistil containing the ovules.

*ovules:* the seed before fertilization.

*petal:* one part of the corolla where this consists of separate, free parts.

*pistil:* the organ bearing ovules and seeds, consisting of one or more carpels and as many stigmas.

*sepal:* one leaf of the calyx where these are separate.

*stigma:* the part of the pistil receiving the pollen.

*urceolate:* urnshaped.

*style:* the stalk connecting stigma and pistil.

*species:* a group of related plants having more in common with each other than with other plants; a group superior to variety, inferior to genus; the second part of a botanical name.

*spore:* the reproductive body of ferns and fern-allies, also of fungi, etc.; usually of a single cell, and containing no seeds.

*stamen:* name designating the combination *of* anther and filament.

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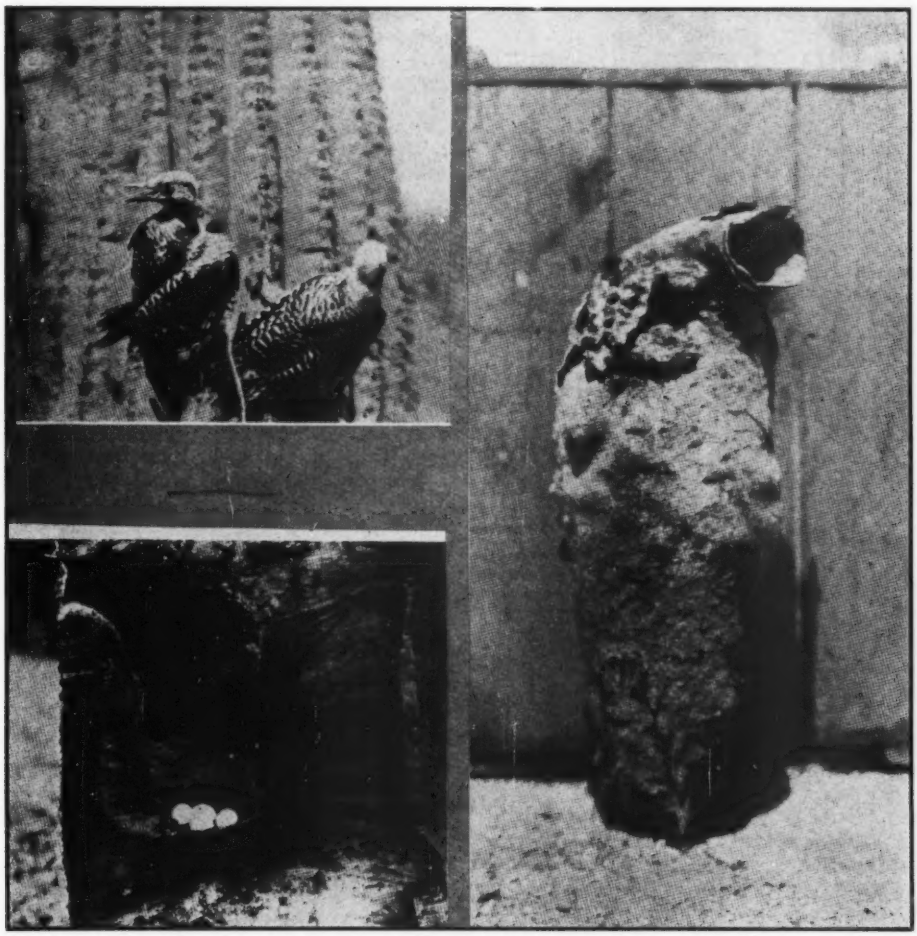
To the Journal:

Your Cactus Journal improves each shining hour. I get a great kick out of it, because I see where I have spurred two Botanists to jump on me—spurs and all, Braunton and Weinberg. It's all right with me. I would have had to stop writing years ago, if nobody paid any attention to what I propound!

I have a very good one on whoever renamed my plants, Vol. 1, No. 5, page 13. He edited my name of *Myrtillocactus geometrizans* into *Myrt. cochal,* in the text accompanying the illustration of my cactus jungle and he was wrong. I've since compared the two —Cochal has heavier armament than Geo., though the form and coloring of the bodies of the plants are identical.

We all do it—believe ourselves and not the other chap.

Yours faithfully,
NED LAWRENCE.



Gila Woodpeckers, their nest, and the nest cavity showing the hardened lining removed from the pulp stalk of a Giant Cactus.

## CACTI AS NESTING SITES

*By* M. FRENCH GILMAN, *Banning, Calif.*

Every lover of cactus, traveling through Arizona, notices the hole-pecked condition of the *Carnegia gigantea,* but very few understand what this is all about, and if their interest is aroused to the point of making further inquiries, the only answer is "Woodpeckers." Through the courtesy of the Cooper Ornithological Club and the "Condor," the following notes by M. French Gilman are furnished the readers of the Journal. The territory covered by these notes is a strip of country about three miles wide, on each side of the Gila River, in Arizona, extending from Blackwater at the east, to Casa Blanca and Snaketown on the west. Except for species peculiarly adapted to life on the desert, the country is anything but a woodpecker's paradise. Mesquite and ironwood, comprising the bulk of the timber, probably make hard pecking, and except along the river bottoms there is not much growth suitable for the birds.

The Gila Woodpecker (*Centurus uropygialis*) is the architect and builder of the holes in the *Carnegia gigantea* in this section. Were it not for the Gila Woodpecker, what would become of the several species of birds that use already prepared cavities for their domiciles? In some

cases these tenants do not even await the pleasure of the excavators, but take forcible possession. In holes excavated by Gila Woodpeckers there may regularly be found nesting the Elf Owl, Ferruginous Pigmy Owl, Ash-throated Flycatcher, and Arizona Crested Flycatcher. Occasionally a Cactus Wren makes use of the handy hollow. A big "rough-neck" scaly lizard frequents the holes when not too high in the cactus, and in two holes I found snakes. It is not pleasant to insert one's hand and have a big lizard or snake crawl up the arm to escape. Rats and mice are sometimes found in the deserted holes, especially if the tree be much decayed and with cracks and hollows connecting holes at different heights in the tree or branch. So these woodpeckers may be considered among the class of innocent or unintentional benefactors.

The food of the woodpecker is varied, nearly everything being grist that comes to his mill. He pecks around decayed and dying trees as well as green ones, and presumably gets the insects usually found and eaten by such birds. The fruit of *Carnegia gigantea* is eaten as long as it lasts.

*C. gigantea* is pecked into very frequently, and I believe some of the pulp is eaten. Water is the least of their worries; as this is supplied by the *C. gigantea* they peck into so freely. The small punctures made are not enlarged, and in some cases quite an area is bitten into.

Nesting sites in this locality are restricted to giant cactus (*Cereus giganteus*), cottonwood and willow, as they are the only suitable material for a nest excavation. More nests are found in the giant cactus, as these plants are more numerous than the others, and more "peckable," though the willows and cottonwoods along the river and the canals are well patronized when sufficiently decayed. Of the nests I examined I should say that fifty per cent were in the cactus, and the rest equally divided between the other trees mentioned. I say *examined,* advisedly as I saw many holes in the gilant,cactus that I did not climb to. My ladder was only fourteen feet long and while I have "shinned up" a cactus several feet beyond the end of my ladder (and painfully) it was done only on special occasions. Life is too short and time too precious to spend any great portion of it digging thorns from the flesh.

As to the size of the holes in the cactus as compared with those in cottonwood and willow, I found no appreciable difference. I expected the holes in the cactus to average a little larger owing to possible greater ease in excavating but the difference was too slight to be sure of in measuring. Of eighteen holes measured, the average diameter was 1.95 inches; the largest was 2.25 inches and the smallest 1.87 inches. The deepest hole was 16 inches, with the entrance 2 inches in diameter. The shallowest one was 9 inches, with entrance a little less than 2 inches in diameter. The average depth of holes measured was a little more than 12 inches. Many of the holes were not exactly circular, there being a difference of from $\frac{1}{8}$ to nearly $\frac{1}{2}$ inch between the long and the short diameter if it be allowable to use the term in that way. Usually the nest hole runs straight in for a short distance before turning downward, the distance seemingly depending on the texture of the wood. In one case the hole went straight back for nine inches before turning downward. It was in a big cottonwood stump, and the bird excavated horizontally until decayed wood was reached, when the hole turned downward. This was an extreme case, as the depth horizontally is usually about three inches. In the giant cactus it varies according to the diameter of the trunk, the smaller the trunk the less distance before turning downward. The softness of the material is not a factor as it is the same in small and large trunks. In only two cases have I found nest holes that penetrated through the ribs of the cactus into the inner pith. In both cases the trunk was too small to furnish room for the nest between the outside and the ribs. The holes are dug in the soft pulp of the cactus, and the raw surface becomes calloused, as it were, forming a tough woody lining to the hole, which persists when the rest of the pulps decays. In this way the nest holes may be found intact, the hole being outlined by the hardened pulp, while the surrounding pulp tissues have entirely decayed, thus making a perfect jug; the Pima Indians are said to use these as water bottles.

The nests were placed at different heights, those in the *Carnegia gigantea* ranging from fourteen feet to the limit of the plant, about thirty-five feet. As my ladder was only fourteen feet long the nests higher than twenty feet were inaccessible, except in the special cases already mentioned. Many of the nests seen were more than twenty feet from the ground, and as a rule the Gila Woodpecker seemed to place the nests higher in the cactus than did the Gilded Flicker. They appear to select large plants, and to patronize the same one for several years, as many unoccupied holes may be seen in it. Unoccupied, that it, as far as the woodpecker is concerned for the old holes are often used by other birds. I have never found two of these woodpeckers occupying the same plant, but frequently a Gilded Flicker, Elf Owl, and Ash-Throated Flycatcher might be next door neigh-

bors, and all housed under the same roof, as it were.

Mr. Pinkley at the Casa Grande ruins showed me a giant cactus that had been moved to their yards from a distance of a quarter of a mile. The cactus at the time of removal contained a nest of young woodpeckers, and the mother followed it up and raised the family to maturity, with exception of one youngster that became impaled on a thorn at the entrance to the nest.

Mearns Gilded Flicker (*Colaptes chrysoides mearnsi*) is abundant throughout this region, and is found in cottonwood and willow groves as well as wherever the giant cactus grows. The giant cactus is to this Flicker and the Gila Woodpecker, what the bamboo is to the inhabitants of some of the eastern islands. The cactus could get along without the flickers, though it probably would not feel properly ventilated without a few nest holes, and it would not look at all natural without them. The cactus furnishes the birds with home, shelter, food and drink. They roost in the holes and seek them as retreat from rain storms. More than once when driving through a heavy rain have I seen a flicker's head thrust from a hole in an inquiring way as though to say "look who's here."

The nests are found in giant cactus, cottonwood and willow, and in that order as to frequency, the giant cactus leading. Nests are in the giant cactus or Saguaro as it is called, far from water, and in cottonwood and willow along the river, on banks of the canals, or even standing in stagnant water pools. Of twenty-seven nests examined, containing eggs or young, twenty-one were in the Saguaro, four in willow, and two in cottonwood. Others were seen in cottonwood but too difficult of access, and many in the cactus were out of reach. If careful count were made I believe about ninety per cent would be found in the cactus. Nests in cottonwood and willow ranged from five to twenty-five feet from the ground, and in *C. gigantea* from eleven to twenty-five or thirty feet.

The entrance to the nest holes varies much, as may be seen from the figures given. The smallest entrance measured 2¾ inches and the largest 4¾ inches. The shallowest hole was ten inches, and the deepest eighteen inches. The average diameter of entrance to thirty-six holes measured was 3.28 inches, and average depth of same holes was 12.75 inches. The entrance to the eighteen-inch hole was three and one-half inches in diameter, and while the ratio is not constant, the shallower holes tend to have smaller entrances, and the deeper holes have larger entrances. It was difficult to measure the diameter of the bottom of the nest holes without destroying the nest, and this was not to be considered when the hole was occupied, so very little data was secured. From the few measuremenas taken it may be stated that the bottom of the nest holes is from four and one-half to six inches in diameter. It is hardly correct to use the term diameter, as many of the hole bottoms were not nearly circular, one I measured being four inches one way and six the other. This variation seemed to be governed by the size of the cactus, as in the smaller plants there was no room to excavate a large circular bottom, and it had to be stretched one way. How the four young find growing room in some of the nests is a puzzle; I have never been able to fit them back when once removed, unless it was done soon after they hatched.

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## A NEW BOOK ON CACTI

The cactus world is anxiously awaiting the completion of a new book, announcement of which follows:

*Cacti and other Succulents*, an annotated list of over 700 species cultivated in the Santa Barbara region. Prepared under the supervision of Ralph Hoffman and E. O. Orpet especially for garden owners. A unique, practical and valuable booklet with suggestions for cultivation. Order copies now for your own use, for your gardener, as a gift for an amateur collector. $1.00 per copy, $10.00 the dozen. Send check or money order to Garden Tours Committee, 929 Paseo Carrillo, Santa Barbara, California.

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U. S. Dept. of Agriculture, Circular No. 66

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*Astrophytum Capricornis*

# ASTROPHYTUM MYRIOSTIGMA

*By* ARTURO F. MOELLER, *Mexico*

In the Journal of the Cactus and Succulent Society, Vol. I, No. 5, of last November, I have read with great interest the article written by Helen McCabe.

The writer describes these rare plants from the beginning, when they were found by the first white man in the year 1837, this article is in part correct and true.

The acount of Dr. C. A. Purpus, is not complete, because this gentleman describes only two varieties of Bishops Hood or *Astrophytum myriostigma.*

The variety described by Dr. Purpus, which grows in some of the mountains of the State of Coahuila, is the *Astrophytum myriostigma "coahuilensis,"* which as Dr. Purpus relates, is a

grayish-white color and its flowers are yellow with a deep red center, and mostly found with five ribs; here Dr. Purpus is right.

The other variety described, and which grows in the State of San Luis Potosi, is of a greenish color and has also generally five ribs. Here I must object, that its flowers have not the deep red center like the variety *A. coahuilensis;* they are of a light yellow color and the flower is much smaller than by the *A. coahuilensis,* this plant is the *Astrophytum myriostigma "potosina,"* it is much lower in form (depressed) than the variety *A. coahuilensis.*

I have exported many thousands of this variety *A. potosina* and never have seen a flower with a red center, like the *Astrophytum coahuilensis.*

In the same State of San Luis Potosi, two other varieties of *Astrophytum myriostigma* are found, one is the *Astrophytum myriostigma columnaris,* which grows tall and slender and the other one is the *Astrophytum myriostigma nuda;* this plant as its name tell, is completely naked, i.e., all white scales are missing, so that this variety is of a dark green color, its flowers are also yellow, but without red center, and mostly grows with five ribs, and is depressed like the *Astrophytum Potosina.*

The *Astrophytum myriostigma columnaris,* also blooms without red center.

Besides the four mentioned varieties of five ribbed *Astrophytum myriostigma,* there is the five ribbed *Astrophytum myriostigma tamaulipensis;* its form is rather "tall," like the *A. coahuilensis,* but its color is like the *A. potosina;* it is "greenish" and its flowers are yellow without red center and much smaller than in the variety *A. potosina* and *A. coahuilensis;* this plant grows generally with five ribs.

The most interesting of all the forms of *Astrophytum myriostigma* is *quadricostata,* from the State of Tamaulipas; it is of a greenish color and the form of the plant is rather "tall," like the five ribbed *A. coahuilensis* and *A. tamaulipensis,* but instead of having five ribs, it has only four as its name tells; its flowers are also yellow, without red center and much smaller than all other varieties.

Only the *Astrophytum myriostigma coahuilensis* has the peculiar red center in its flower like most varieties of *Astrophytum capricornis.*

*Astrophytum myriostigma, potosina, nuda, columnaris, tamaulipensis* and *quadricosta,* all bloom yellow and the red center of the flower is absolutely missing.

I have exported all these varieties by the thousands in the last eight years, to many parts of the world, with the exception of the *A. columnaris,* this plant is very rare, but it exists.

I do not criticise the article of Helen McCabe; I just want to mention the different varieties of these beautiful and interesting plants and familiarize the readers of the Journal with all the different varieties of Bishop Hoods or *Astrophytum myriostigma,* which my long experience has taught me.

The varieties *A. coahuilensis, potosina* and *tamaulipensis,* are found sometimes with 6, 7, 8, 9 or 10 ribs. The *A. quadricostata* is only found with four ribs, in some districts of the State of Tamaulipas.

### Tentative Key to the Genus ASTROPHYTUM

Based in part on information furnished by Mr. Arturo Moeller of Coahuila, Mexico.

Plants spiniferous
- Ribs prominent
  - Spines contorted ..... 1. A. capricornis.
  - Spines straight, porrect ..... 2. A. ornatum.

Plants spineless
- Ribs rounded ..... 3. A. asterias.
- Ribs prominent
  - Flowers with red center ..... 4. A. coahuilensis.
  - Flowers all yellow
    - Tall columnar ..... 5. A. columnaris.
    - Not tall columnar
      - Plants always 4 ribbed ..... 6. A. quadricostata.
      - Plants mostly 5 ribbed
        - Plants spotted with white ..... 7. A. myriostigma.
        - Plants without white spots
          - Plants not depressed globose ..... 8. A. tamaulipensis.
          - Plants depressed globose
            - Flowers small ..... 9. A. potosina.
            - Flowers large ..... 10. A. nuda.

This key is intended as a horticultural guide. After viewing and studying the material from Mexico I will determine the species thoroughly. From more material we may determine from which this interesting form has developed.

—ARTHUR D. HOUGHTON.

## Nananthus albipunctus

**(Haw.) N. E. Br.**

Approx. x ½, Photo by West

Our illustration shows the plant of *Nananthus* mentioned in last months, (Page 129), *Mesembrianthemum* article. It is probably *N. albipunctus,* or very near that species. The only other described species that could come into question is *N. albinotus,* which is very similar, except for somewhat larger dimensions that would fit our plant. Color of the flowers is a bright golden yellow. They opened late in the forenoon in full sun. The leaves are a vivid dark green, purplish in exposure. Only near the tip of one or two of the older leaves do the dots appear white, as the specific name would imply.

J. W.

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I have a suggestion to make which I think will be very acceptable to the readers of the Journal:

There are perhaps many other amateurs like myself, who do not know when many of their cacti ought to bloom. Neither do we know which are summer and fall bloomers or which should flower in the winter or spring. If you have the space will not not each month publish a sort of *"Cactus Calendar,"* mentioning the different varieties that may be expected to bloom during that month. I hope this plan will be satisfactory and that you will adopt it. The first issues of the Journal are unusual, attractive and instructive, and as I hope to glean much practical information from its pages I am always glad to add my "bit of experience," hoping by chance to help some one else, in the care of their plants.

J. C. BUTTERWORTH,
St. Paul, Minn.

ED. NOTE: Will someone volunteer to obtain this information monthly?

## Secretary's Column

In assuming the duties of secretary, it is with the realization that President Willis, when secretary, set such a high standard for the office that it will be no easy task to at once reach those standards. However, I look forward with pleasure to serving the Society during this year. If you will bear with me until I get my "spinal column" adjusted, I feel that I may prove worthy of your confidence.

The February meeting will be held on Sunday, February 23, 1:30 P. M., at the home of Col Perrie Kewen, 1243 Brunskick Avenue, South Pasadena. Those who have enjoyed Col. Kewen's hospitality will recall it with pleasure. Many changes have been made in his gardens since we last met there.

With the adoption of the new By-Laws we are required to make our membership year and subscription year coincide. Hereafter, members must be subscribers to the Journal. Details concerning this readjustment were sent to you in a recent bulletin. The promptness with which many responded to that request is appreciated. The annual dues are now three dollars which includes membership dues and subscription to the Journal and were payable January first.

The old saying, "Great Oaks from Little Acorns Grow," was never more true than in the case of our Society. From a small group it has grown to over the five hundred mark with members in all parts of the world. Is a goal of one thousand too high to set?

Do you know what cacti are native to your particular state? I am interested in compiling a list by states. Will you assist?

Let's unite in making 1930 a bigger, better and BUSIER year for the Society.

BOYD L. SLOANE, *Secretary,*
1421 Dominion Avenue,
Pasadena, California.

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### Leave It to the Boy

About the most improvised glass house used by any cactus collector is that owned by a young man living in Los Angeles. He acquired an old discarded sedan body, with all the glass unbroken, and placed therein shelves where the seats used to be. Removing the roof he covered this with broken pieces of glass picked up where he got the body. The total expenditure was "zero" for a good, workable greenhouse for this lad's cactus collection—and it's not the poorest collection in Los Angeles either.

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F. B. WALLIS

## PRESIDENT'S COLUMN

We are just one year old—a mere infant in age, yet a very active one. We have grown almost too fast to keep up with *what is expected of us.*

The Society is not a commercial enterprise, and our officers serve us without compensation; articles in our Journal are written without remuneration; our meetings are held in libraries or homes and without expense to the Society; our expenses are reduced to a minimum—all to provide a Journal that will be of most interest to every one of our members, and as our income increases our Journal will be larger and better.

The editorial aim is to provide reading material and illustrations that will please everyone. We have been asked to publish more scientific articles; others have asked for more popular reading matter; others want stories. Therefore we endeavor to publish in each issue, a variety of articles. An all-scientific Journal would not please those who are just beginning the study of xerophites and without the scientific articles the beginners would not progress, while the advanced students and our scientific members would not be interested.

Someone always has to do the work. Your Society and Journal is not being run for a few members but is being managed by a few members for all of you, and the few who are doing the work will welcome any assistance you are capable of giving.

The Society can be a lasting success only if all of you help where and when you can.

We will welcome offers of help from any member, or a suggestion of names of any members who might be of assistance on show, entertainment, or membership committees; proof-readers, reporters for the Journal, reports for the Society to other publication, etc. If you can and will take part in the entertainment by giving a lecture on any subject interesting to our members or know any one, whether a member or not, who can and will lecture to us, we would be glad to have you submit names.

If you have space we would be glad to have you invite the Society to meet at your home. If you know of any news items about members or about cacti and succulents send them in to the president or the editor as early as possible.

Let us know what you want for entertainment, what kind of lectures or who you want to hear; also what interests you most in the Journal. Use our question column. Patronize our advertisers, and advertise what you have to sell.

Remember this is your Journal and your Society and it can only be as good as you make it. The officers of the Society can please you only if they know what you want.

I wish to thank the members for the honor they have conferred upon me and assure them I will do all in my power to serve them well.

EDITOR'S NOTE: The above message carries a great many facts well worth re-reading many times, not only now, but in months to come. A more general understanding of the above may avoid criticism of those busy people who are generously giving their time for those who are appreciative of their efforts. Many things might be done if one could devote all of one's time to this cause but until there are a great many more members and cooperators we shall have to depend upon those who are unselfishly working for the pleasure they receive from their interest in xerophites.

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Dear Mr. Willis:

The "Nederlandsche Vereeniging van Vetplantenverzamelaars "Succulenta" sends its best wishes for a *bright Xmas* and *happy New Year* to the officers and members of "The Cactus and Succulent Society of America."

The year 1930, may it be one of unprecedented prosperity for our American Sisterunion and its recently published Journal!

You can be quite sure that we are sympathizing very much with the Society you represent and its interesting monthly publication.

With kindest regards and best wishes,

M. C. KARSTEN,

*Hon. Secretary of the N. V. v. V. "Succulenta."*

The Nederl. Vereeniging van Vetplantenverzamelaars "Succulenta" (Dutch Society of Succulent Collectors) was founded the 16th of June, 1919, and now numbers over 800 members at home and abroad. A monthly Journal called "Succulenta" is sent free to members and is printed for private circulation only. Dues are $1.20, our money, per year. President Chr. de Ringh, van Osladelaan. Secy., M. C. Karsten, Terborg, Holland.

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Mail subscriptions to Boyd L. Sloane, 1421 Dominion Ave., Pasadena Calif. Subscription price $3 per year with or without membership; foreign $3.50.

I enclose herewith $ for one year's dues in the Society and one year's subscription to the *Journal of the Cactus and Succulent Society of America.*

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